

**REV:00**  
2002. MAY

# MW- II Series

## Service Manual



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# 1. PREFACE

## A. Introductions

Thank you for purchasing our CAS MW-II Series.

These series has been designed with CAS reliability, under rigid quality control and with outstanding performance. Your specialty departments can enjoy these high quality reliable CAS products.

We believe that your needs will be satisfied and you will have proper reliability.

This manual will help you with proper operation and care of the MW-II series.

Please keep it handy for future reference.

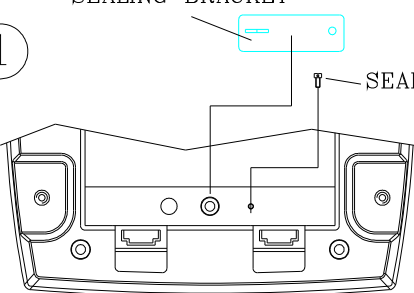
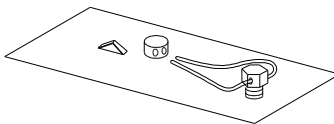
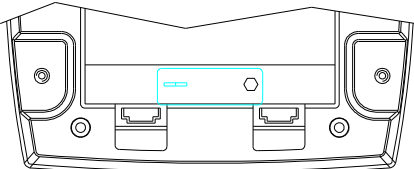
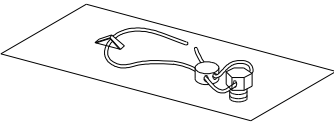
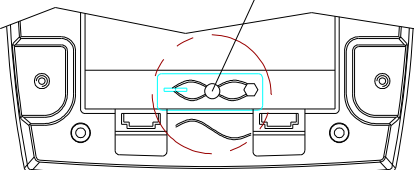
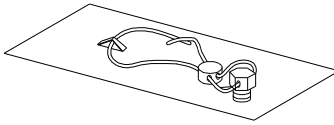



## B. Precautions

1. Make sure that you plug your scale into the proper power outlet.
2. Place the scale on a flat and stable surface.
3. Plug into a power outlet one hour before operations.
4. Keep the scale away from strong EMI noises may cause incorrect weight readings.
5. This scale must be installed in a dry and liquid free environment.
6. Do not subject the scale to sudden temperature changes.
7. Do not subject the platter to sudden shocks.
8. If the scale is not properly level, please adjust the 4 legs at the bottom of the scale (turn legs clockwise or counterclockwise) so as to center the bubble of the leveling gauge inside the indicated circle.

## C. Specifications

MODEL	MW II 200	MW II 300	MW II 2000	MW II 3000
MAX. CAPACITY	200 g	300 g	2 kg	3 kg
READABILITY	0.01 g	0.01 g	0.1 g	0.1 g
TARE SUBTRACTION	200 g	300 g	2 kg	3 kg
DISPLAY	6 digit (LCD)			
WEIGHING UNIT	g,oz,tl,PCS,dwt, mom,ct,GN,lb,%			
LINEARITY	± 0.01 g		± 0.1 g	
REPEATABILITY	± 0.01 g		± 0.1 g	
STABILIZATION TIME	2~3 seconds			
DISPLAY SPEED	5 times/ seconds			
INTERFACE	RS232C			
POWER SOURCE	– Adaptor DC12V/300mA (Recharge Adaptor DC12V/850mA) – Dry Battery (1.5V x 6 AA size)			
POWER CONSUMPTION	0.4 W			
OPTION	<ul style="list-style-type: none"><li>● <b>B Type : Display Backlight</b><ul style="list-style-type: none"><li>– Using backlight cut the battery life by 30–40%.</li></ul></li><li>● <b>R Type : Rechargeable Battery</b><ul style="list-style-type: none"><li>– NiCd/NiMH Battery (7.2V)</li><li>– Adaptor DC 12V/850mA</li><li>– Approx. 12 hours (NiMH battery)</li></ul></li><li>● <b>D type : Dual Display</b></li></ul>			
OPERATING TEMPERATURE	–10℃ ~ +40℃			
PLATTER SIZE(mm)	Φ 300		158*144.6	
PRODUCT WEIGHT	1.04 kg		1.3 kg	
PRODUCT SIZE(mm)	189(W) x 271(D) x 83(H)		189(W) x 271(D) x 83(H)	

D. Sealing Method

REVISIONS		2		3																																																						
MODEL NO.	PART NO.	REV	SYM	CONTENTS	DRAWN	CHECKED	APPROVED																																																			
<div>SEALING METHOD</div> <div><div><p>①</p><p>SEALING BRACKET</p><p>SEALING BOLT</p></div><div><p>DETAIL A</p><p>a</p></div><div><p>②</p></div><div><p>b</p></div><div><p>③</p><p>SEALING LEAD</p></div><div><p>c</p></div></div> <table border="1"><thead><tr><th>NO</th><th>PARTS NAME</th><th>SPECIFICATION</th><th>Q'TY</th><th>REMARK</th></tr></thead><tbody><tr><td colspan="2">TOLERANCES .UNLESS OTHERWISE SPECIFIED</td><td colspan="2">NAME OR TITLE</td><td rowspan="2"><b>CAS</b> CAS CORPORATION #19 KANAP-RI KWANGJEOK-MYON YANGJU-KUN KYUNGKI-DO,KOREA</td></tr><tr><td colspan="2">ANGULAR ± <i>N.A</i></td><td colspan="2"><i>SEALING METHOD</i></td></tr><tr><td rowspan="3">E</td><td>DECIMAL ± <i>0.2</i></td><td>FIRST USED IN ASSEMBLY</td><td><i>MICRO WEIGHING SCALE</i></td><td>MATERIAL <i>-</i></td></tr><tr><td rowspan="2"> Q'TY/SET <i>1/1</i></td><td>FIRST MADE FOR</td><td><i>MW-II</i></td><td>END FINISH <i>SEE NOTES</i></td></tr><tr><td>CONTRACT OR CUSTOMER NO</td><td><i>WORLD WIDE</i></td><td>DO NOT SCALE DRAWING</td><td>DIMENSIONS ARE IN <i>MM</i> INCH</td></tr><tr><td colspan="2">DRAWN</td><td>CHECKED</td><td>CHECKED</td><td>APPROVED</td><td>SCALE</td><td>DRAWING.PART NO.</td><td>REV</td></tr><tr><td colspan="2"></td><td></td><td></td><td></td><td><i>N:S</i></td><td></td><td><i>00</i></td></tr><tr><td colspan="2">.20</td><td>.20</td><td>.20</td><td>.20</td><td colspan="3"></td></tr></tbody></table> <div>1 2 4</div> <div>CAS FORM A4 (210mmx297mm)</div>								NO	PARTS NAME	SPECIFICATION	Q'TY	REMARK	TOLERANCES .UNLESS OTHERWISE SPECIFIED		NAME OR TITLE		<b>CAS</b> CAS CORPORATION #19 KANAP-RI KWANGJEOK-MYON YANGJU-KUN KYUNGKI-DO,KOREA	ANGULAR ± <i>N.A</i>		<i>SEALING METHOD</i>		E	DECIMAL ± <i>0.2</i>	FIRST USED IN ASSEMBLY	<i>MICRO WEIGHING SCALE</i>	MATERIAL <i>-</i>	 Q'TY/SET <i>1/1</i>	FIRST MADE FOR	<i>MW-II</i>	END FINISH <i>SEE NOTES</i>	CONTRACT OR CUSTOMER NO	<i>WORLD WIDE</i>	DO NOT SCALE DRAWING	DIMENSIONS ARE IN <i>MM</i> INCH	DRAWN		CHECKED	CHECKED	APPROVED	SCALE	DRAWING.PART NO.	REV						<i>N:S</i>		<i>00</i>	.20		.20	.20	.20			
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## 2. Calibration & Program code download

### A. General calibration

#### 1. Span Calibration – “ C.SPAN”

- 1) **CAL** Switch is located in the battery cover at the bottom of the scale.  
While pressing the switch, turn on the power then you will go to calibration mode.
- 2) The display will shows “ **CALMod**” three times and “ **C.SPAN**” .
- 3) Press the **SET** key to go to “ **C. SPAN**” menu.
- 4) The display will shows “ **UNLOAd**” then press the **SET** key. Note that there is nothing on the platter. If you want to cancel this span calibration, press the **ZERO** key.
- 5) Press the **SET** key, then the display shows “ **StAbLE**” . Note that the scale should be stable.
- 6) When the display shows “ **LOAd**” , place the weight of maximum capacity on the platter then press the **SET** key.
- 7) The display shows “ **StAbLE**” and “ **End**” then span calibration is finished.

#### 2. Capacity – “ C.CAPA”

- 1) Press the **MODE** key until the display shows “ **C.CAPA**” menu in the calibration mode.
- 2) Press the **SET** key to go to “ **C.CAPA**” menu.
- 3) Press the **MODE** key until the display shows maximum capacity of your scale.
- 4) Press the **SET** key to save. If you want to cancel, press the **ZERO** key.
- 5) Note that the capacity is set to **300 g** by default.

#### 3. Trimming (Multi-Point Calibration) – “ C.triM”

- 1) Press the **MODE** key until the display shows “ **C.triM**” menu in the calibration mode.
- 2) Press the **SET** key, you will see the internal value.
- 3) If the internal value is not zero, press the **TARE** key to set it to zero.
- 4) Place a weight, M1 on the platter and adjust the value to AD1 by pressing the **PRINT** or **MODE** key. Refer to Table 1. **PRINT** key is used to increase the value and **MODE** key is used to decrease the value.

<Table 1>

Weight			Internal Value Range	
Capa.	MW II-300	MW II-3000		
M1	100g	1000g	AD1	99944-100055
M2	200g	2000g	AD2	199944-200055
M3	300g	3000g	AD3	299944-300055
Capa.	MW II-200	MW II-2000		
M1	50g	500g	AD1	74944-75055
M2	100g	1000g	AD2	149944-150055
M3	200g	2000g	AD3	299944-300055

- 5) If the value is within AD1, the display shows “ **ZERO** ” but if the value is out of this range, it is impossible to adjust this value.
- 6) Place a weight, M2 on the platter and adjust the value to AD2 by pressing the **PRINT** or **MODE** key. Refer to Table 1.
- 7) If the value is within AD2, the display shows “ **NET** ”.
- 8) Place a weight, M3 on the platter and adjust the value to AD3 by pressing the **PRINT** or **MODE** key. Refer to Table 1.
- 9) If the value is within AD3, the display shows “ **Battery** ”.
- 10) Press the **SET** key to save it. If you want to cancel, press the **ZERO** key.

#### 4. Option (Backlight) – “ C.OPTbL ”

- 1) Press the **MODE** key until the display shows “ **C.OPTbL** ” in calibration mode.
- 2) Press the **SET** key, the display shows “ **OFF** ” or “ **On** ”.
- 3) You can change this setting by pressing **MODE** key. Press the **SET** key to save. If you want to cancel, press the **ZERO** key.
  - ON : It is available to use backlight
  - OFF : It is not available to use backlight
 Note that backlight is set to **OFF** by default.

#### 5. Zero Range – “ C.ZPASS ”

This is an allowable range from calibrated zero that the scale goes to zero from at start up.

- 1) Press the **MODE** key until the display shows “ **C.ZPASS** ” in calibration mode.
- 2) Press the **SET** key, the display shows “ **10 PER** ” or “ **2 PER** ”.
- 3) You can change this setting by pressing **MODE** key.
  - 10 PER : Zero range is 10% of maximum capacity.
  - 2 PER : Zero range is 2% of maximum capacity.
 Note that zero range is set to **10 PER** by default.
- 4) Press the **SET** key to save it.

#### 6. Unit – “ C.Unit ”

- 1) Press the **MODE** key until the display shows “ **C.Unit** ” in calibration mode.
- 2) Press the **SET** key, the display shows “ **C.U.grAm** ”.
- 3) Press the **SET** key, the display shows “ **OFF** ” ( “ **ON** ” ).
- 4) You can change this setting by pressing **MODE** key. Press the **SET** key to save.
  - ON: You can use this unit.
  - OFF : You cannot use this unit.
- 5) When the display shows “ **C.U.grAm** ”, press the **MODE** key to set other units.  
Press the **SET** key to save.  
Note that g, ct, pcs and % are set to **ON** by default.

## 7. Gravity Constant – “ C.Grvty”

- 1) Press the **MODE** key until the display shows “ **C.Grvty**” in calibration mode.
- 2) Press the **SET** key, the display shows “ **C.G.NewG**” . At this time, press the **MODE** key. You will see the “ **C.G.OLdG**” .  
**C.G.OldG** menu : you can enter gravity constant of calibration place.  
**C.G.NewG** menu : you can enter gravity constant of using place.
- 3) Press the **SET** key, the display shows “ 9.XXXXX” .
- 4) To increase the number, press the **MODE** key and to go to the right side of digit, press the **SET** key. To go to the left side of digit, press the **TARE** key. At last digit, press the **SET** key to save. If the value of fifth decimal place is zero, you have to enter 0.
- 5) If you want to cancel, press the **ZERO** key.
- 6) The value of C.G.OldG is converted to the value of C.G.NewG automatically when you perform the span calibration.
- 7) Note that the gravity constant is set to **9.79940** by default.

## 8. Zero Tracking Level – “ C.ZtrAC”

- 1) Press the **MODE** key until the display shows “ C.ZtrAC in calibration mode.
- 2) Press the **SET** key, the display shows previous setting value. Press the **MODE** key to change this value. (Note that zero tracking level is set to **1.0d** by default.)
- 3) Press the **SET** key to save.

## 9. Self-Calibration – “ C.SELFC”

- 1) Press the **MODE** key until the display shows “ C.SELFC” in calibration mode.
- 2) Press the **SET** key, the display shows previous setting value. Press the **MODE** key to change this value. (Note that self calibration is set to **ON** by default.) If you set it to ON, the scale performs self calibration every 5 minutes.
- 3) Press the **SET** key to save.

## 10. Version – “ C.vEr”

- 1) Press the **MODE** key until the display shows “ C.vEr” in calibration mode.
- 2) Press the **SET** key, the display shows the version of the scale (For example, “ V2.00 ” )
- 3) Press the **MODE** key, the display shows country code. (For example, “ Std ” – Standard)
- 4) To exit this mode, press the **ZERO** key.

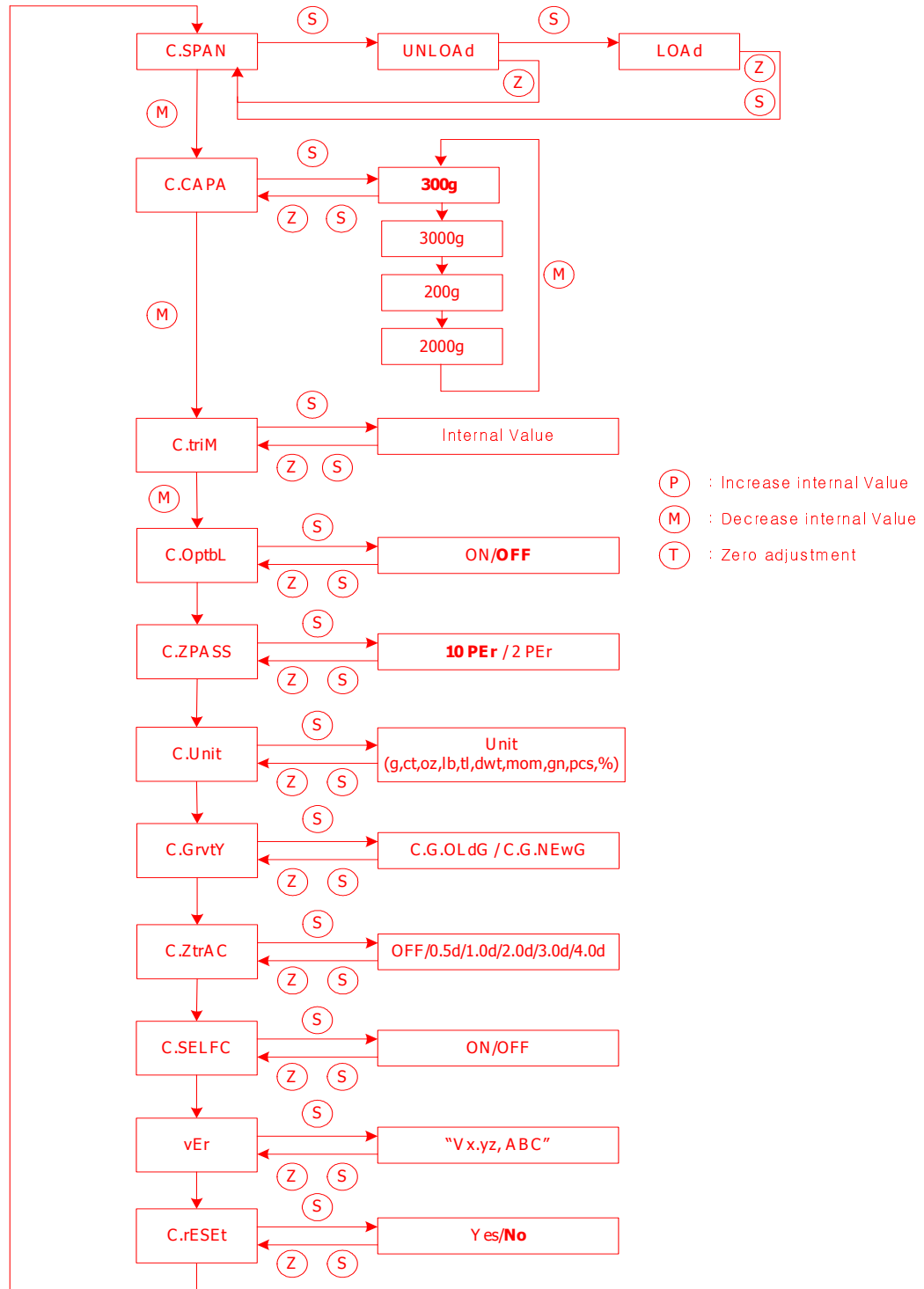
## 11. Reset (Default Setting : Calibration Data) – “ C.rESet”

- 1) Press the **MODE** key until the display shows, “ **C.rESet**” in calibration mode.
- 2) Press the **SET** key, the display shows “ **No**” .
- 3) Press the **MODE** key, you will see “ **yES**” and press the **SET** key to reset. All settings are changed to default but zero and span values are remained. If you want to set these values to 0, press the CAL switch and **SET** key when the display shows “ **yES**” on step 3).



## B. Calibration Block Diagram

### MW-II < Calibration Mode >



**S** : SET key   **Z** : ZERO key   **T** : TARE key   **M** : MODE key   **P** : PRINT key

### C. How to Confirm the Setting Value

1. Turn on the power and connect the scale to PC with RS232C cable.
2. Open the terminal on PC and adjust COM1, COM 2 and transmission speed to the scale.
3. Press the **P** on the keyboard of PC then you will hear the beep on the scale. Check the weight on the terminal.
4. If there is no response on step 3, check the cable, port, transmission speed.
5. Enter **83419** on the PC terminal, you will go to debugging mode.
6. Press **Ctrl+R** key, you will see the data as below on the PC terminal. If not, enter 83419 slowly.

CAS MW-2 300	-> Model
STD V2.00b	-> Code Version
Comp. Date :	-> Date of Code Compile <= Code Version
2001Mar14-174117	(YYYYMMDD-HHMMSS)
2001/04/27 16:33:15	-> The Present Time
Weight : 779	-> Weight
AD(aver) : 25002	-> Internal AD value
AD(aver2) : 7753	-> (aver - Zp_Cal) * CalFact
Zp_Cal : 16518	-> <b>Zero AD value</b>
Fp_Cal : 344804	-> <b>Span AD value</b>
CalFact : 91383	-> (300000 / (Span - Zero)) * 100000
LSpanDif0 : 0	-> Multi-Calibration Data
LSpanDif1 : 0	-> Multi-Calibration Data
FactGap0 : 0	-> Multi-Calibration Data
FactGap1 : 0	-> Multi-Calibration Data
FactGap2 : 0	-> Multi-Calibration Data
Capa. : 0	-> Capacity(0-3)
Ini_ZeroV: -37	-> Initial Zero Buffer
Z_Buf : 0	-> Rezero Buffer
T_Buf : 0	-> Tare Buffer
TO_Cnt70m: 65	-> Timer0
T1_Cnt70m: 0	-> Timer1
Gravity0 : 9.7994	-> OLD Gravity Constant(Reference)
GravityN : 9.7994	-> NEW Gravity Constant
Hand_Buf0: 25003	-> AD Buffer
Hand_Buf1: 25006	
:	
Hand_Buf8: 25003	
Hand_Buf9: 25003	

#### ● Keys for debugging mode

Keys	Descriptions
Ctrl + R	Report
Ctrl + E	EEPROM Erase
X	EEPROM Read
A	ADC(CS5522) Initializing
D	Display Buffer Read

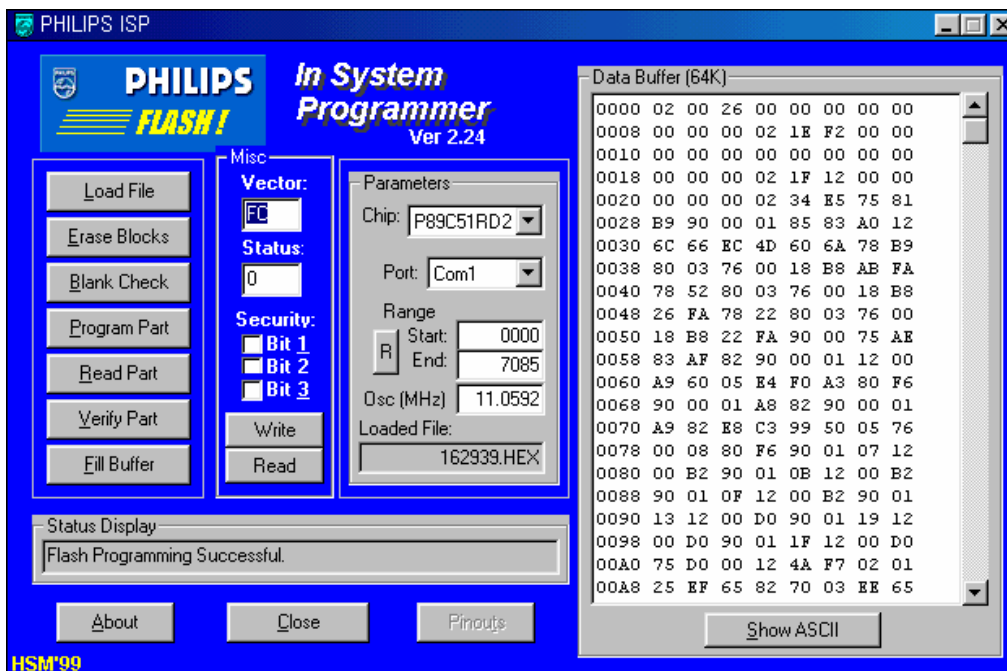
#### D. Program Code Download

1. Set J40, J41, J60 of main PCB to download mode as below.  
After setting the J40, J41 and then set the J60.

Mode	J40			J41		J60	
	1	2	3	1	2	1	2
	5V		12V		G		
Normal	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Code Download	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

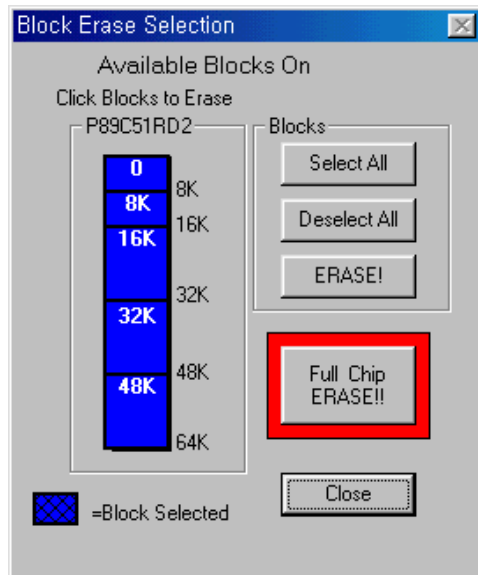
2. Connect RS232c cable to PC.
3. Turn on the power.
4. Type **winisp.exe** and press the **ENTER** key.
5. Set the parameters as below.

Chip : P89C51RD2  
Port : Com1/Com2  
Osc(MHz) : 11.0592



6. Click **Read** and confirm the message "Boot Vector Read OK." on Status Display. At this time confirm **Vector:FC**, **Status:00** setting. If not, set them again and click **Write**. If "Boot Vector Read OK." Message is not shown, confirm step 1, 2.

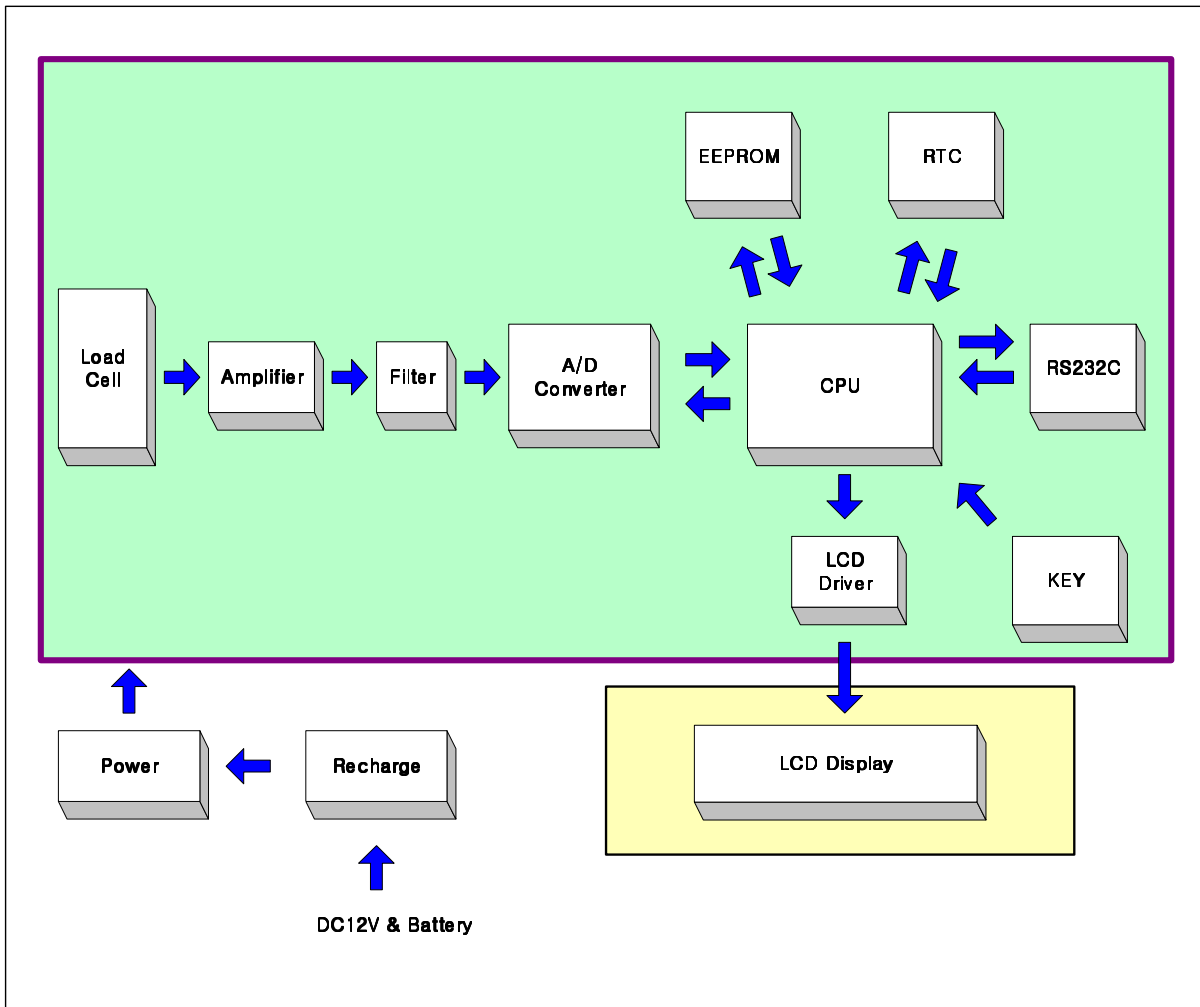
7. Click **Load File**.
8. Click **Erase Blocks**.
9. Click **Select All** and then **ERASE!**.



9. Click **Blank Check**, **Program Part** and **Verify Part**.
10. Turn off the power and set J40, J41, J60 to Normal Mode.
11. Turn on the power and check the operation.

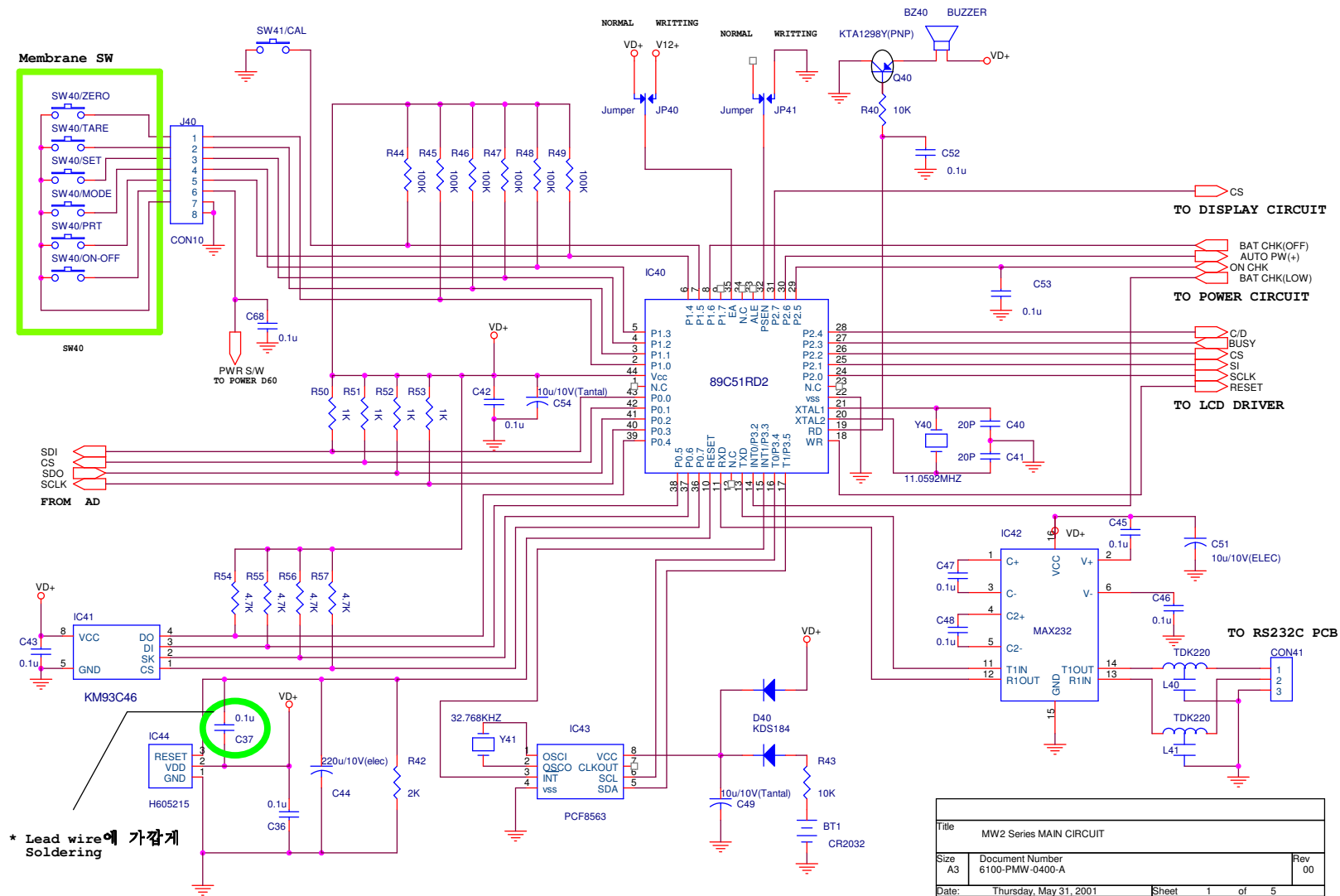
### 3. The Schematics and the Diagram

#### A. System Block Diagram

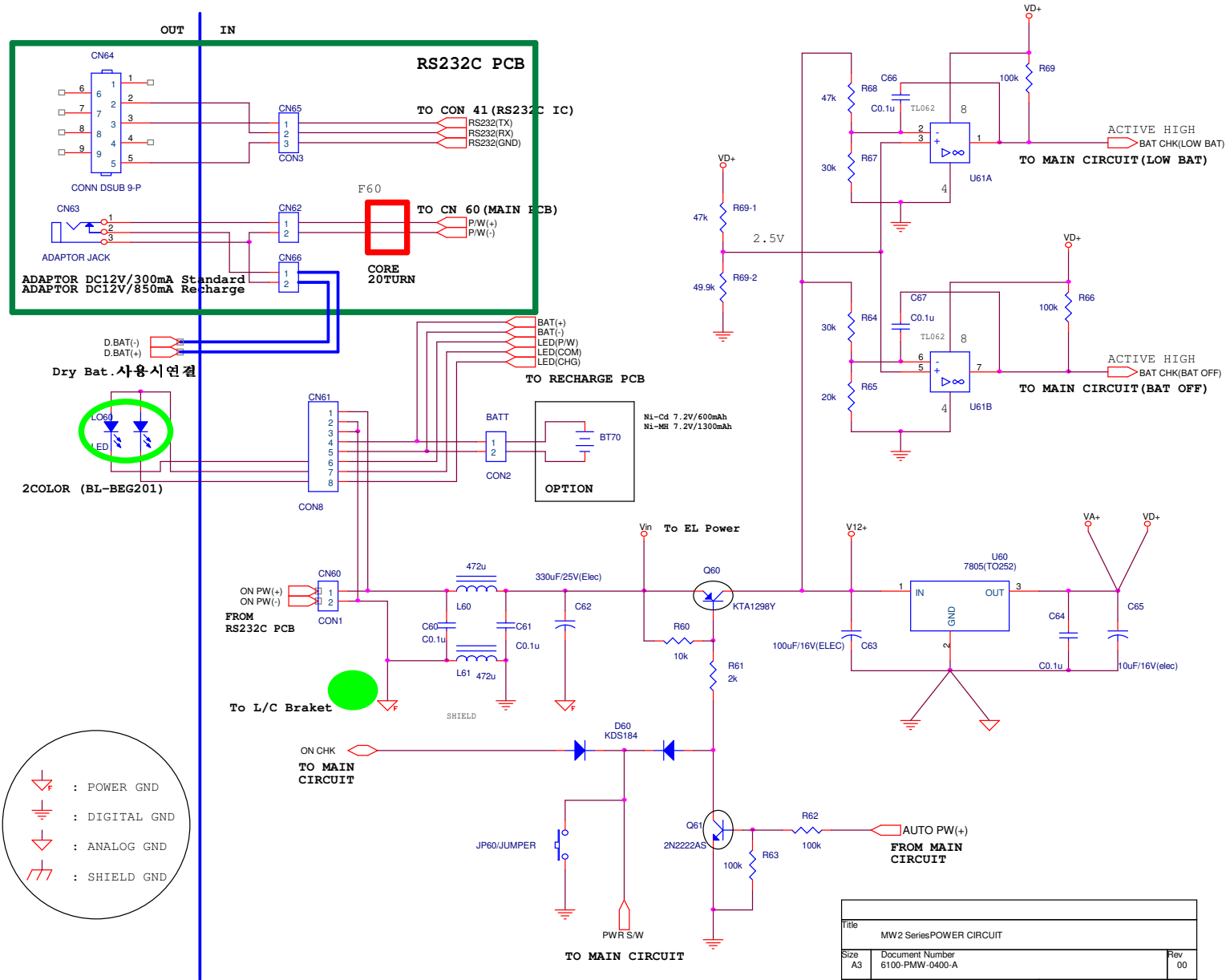


## B. Circuit Diagram

### 1. Main Circuit (CPU). No1/5

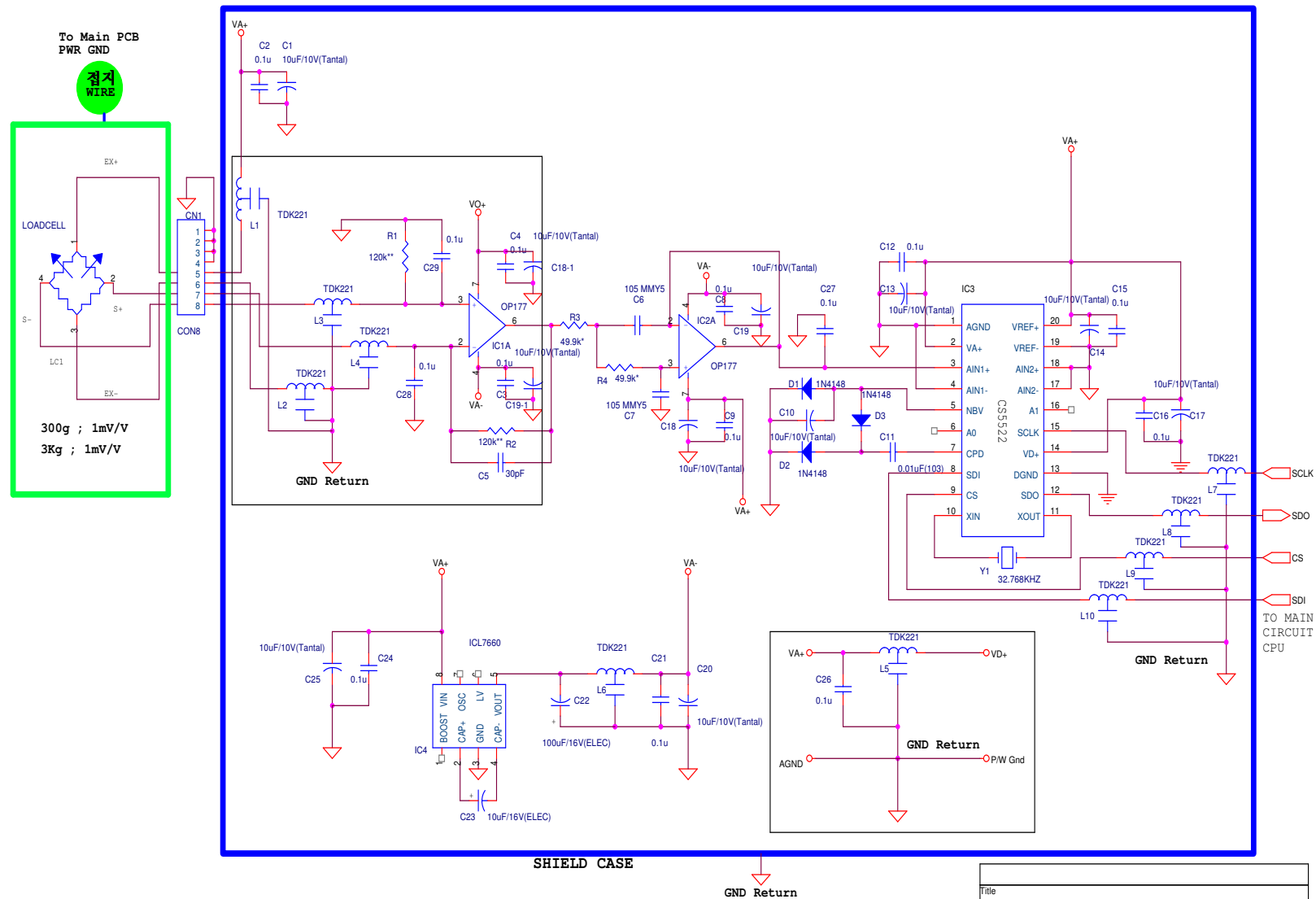


Title		
MW2 Series MAIN CIRCUIT		
Size	Document Number	Rev
A3	6100-PMW-0400-A	00
Date:	Thursday, May 31, 2001	Sheet 1 of 5



2. Power Circuit. No 2/5

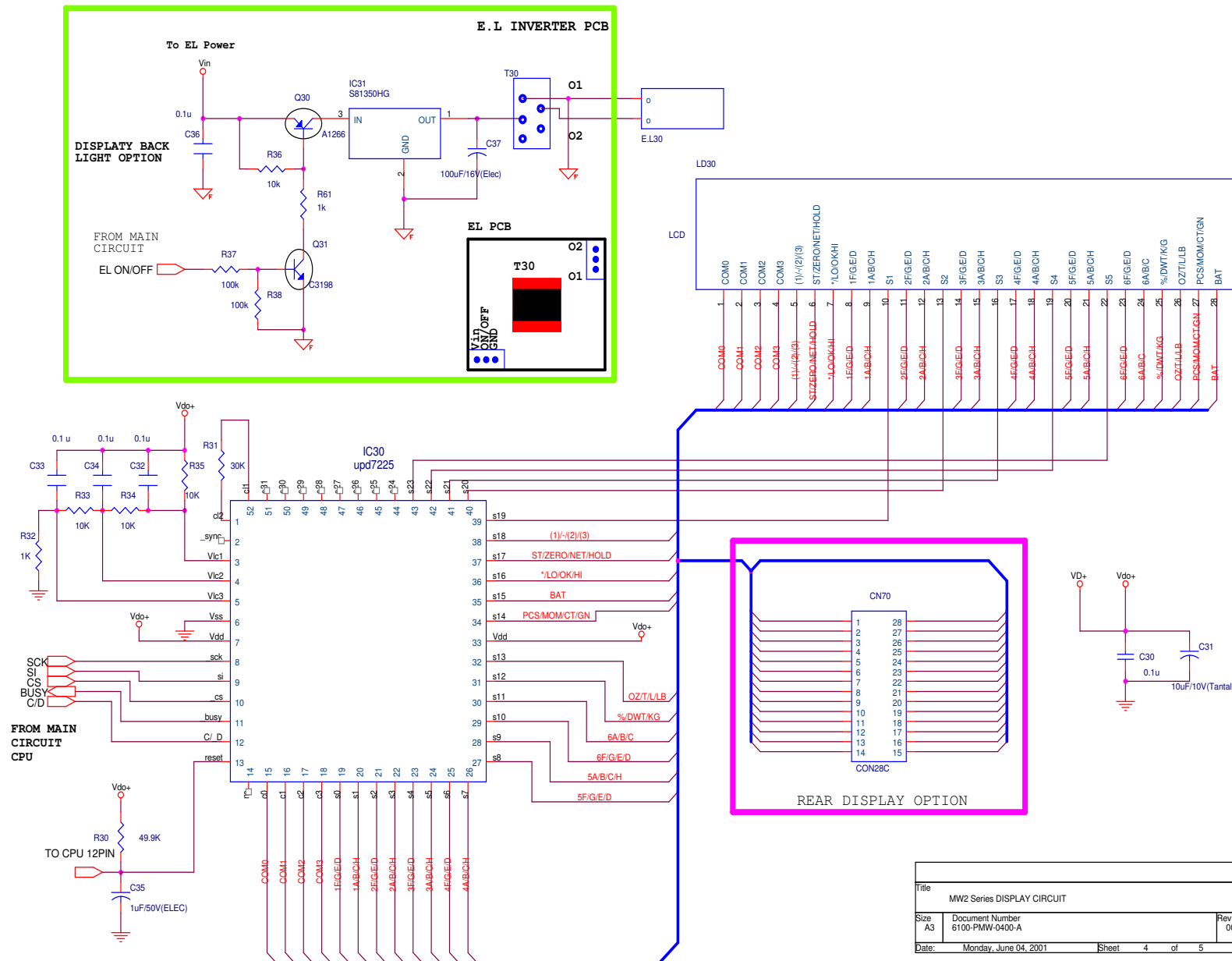
### 3. Analog Circuit (AMP, FILTER, A/D, POWER). No 3/5



Title		
MW2 series ANALOG CIRCUIT (AMP, FILTER, A/D, Power)		
Size	Document Number	Rev
A3	6100-PMW-0400-A	00
Date:	Monday, June 04, 2001	Sheet 3 of 5

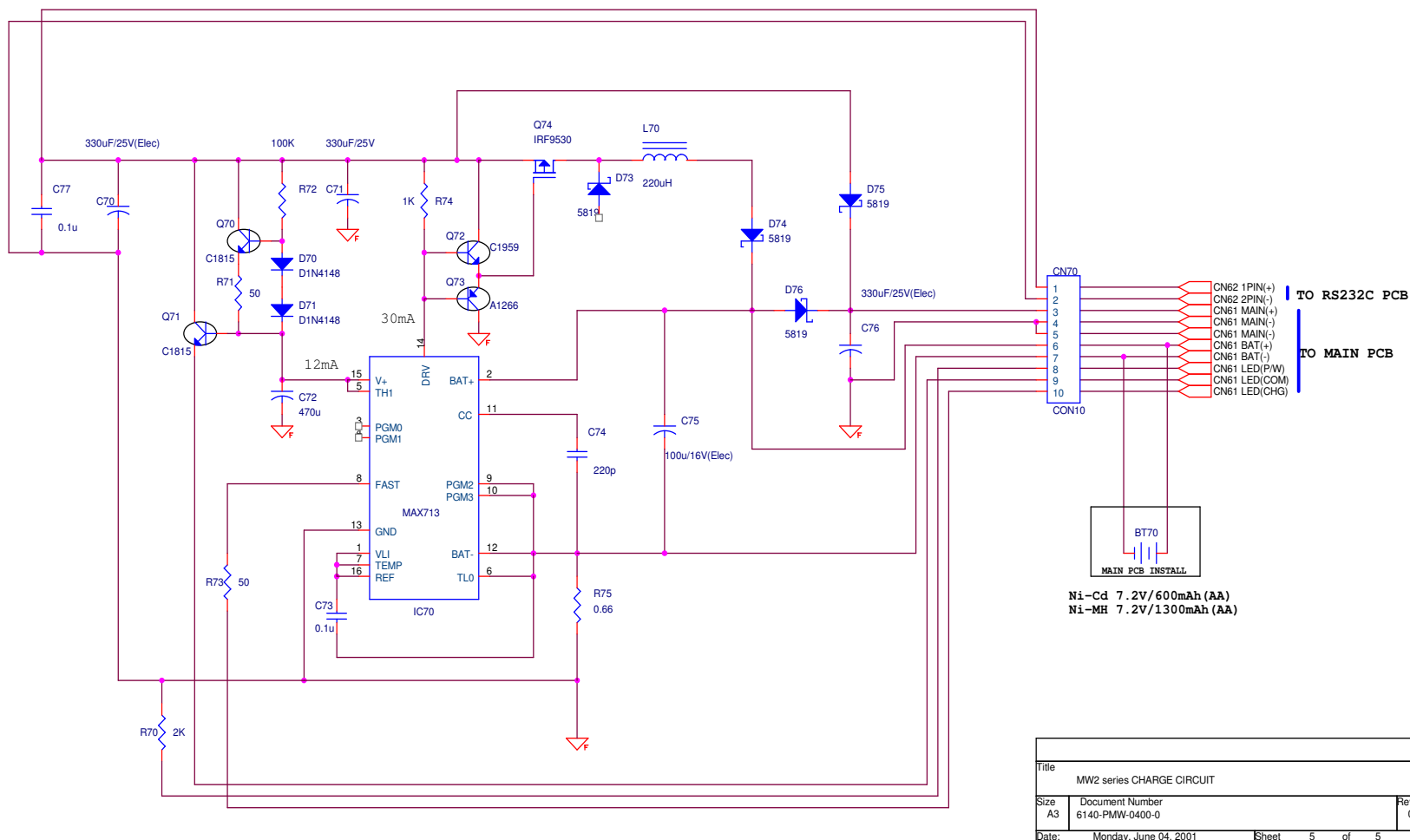


#### 4. Display Circuit. No 4/5



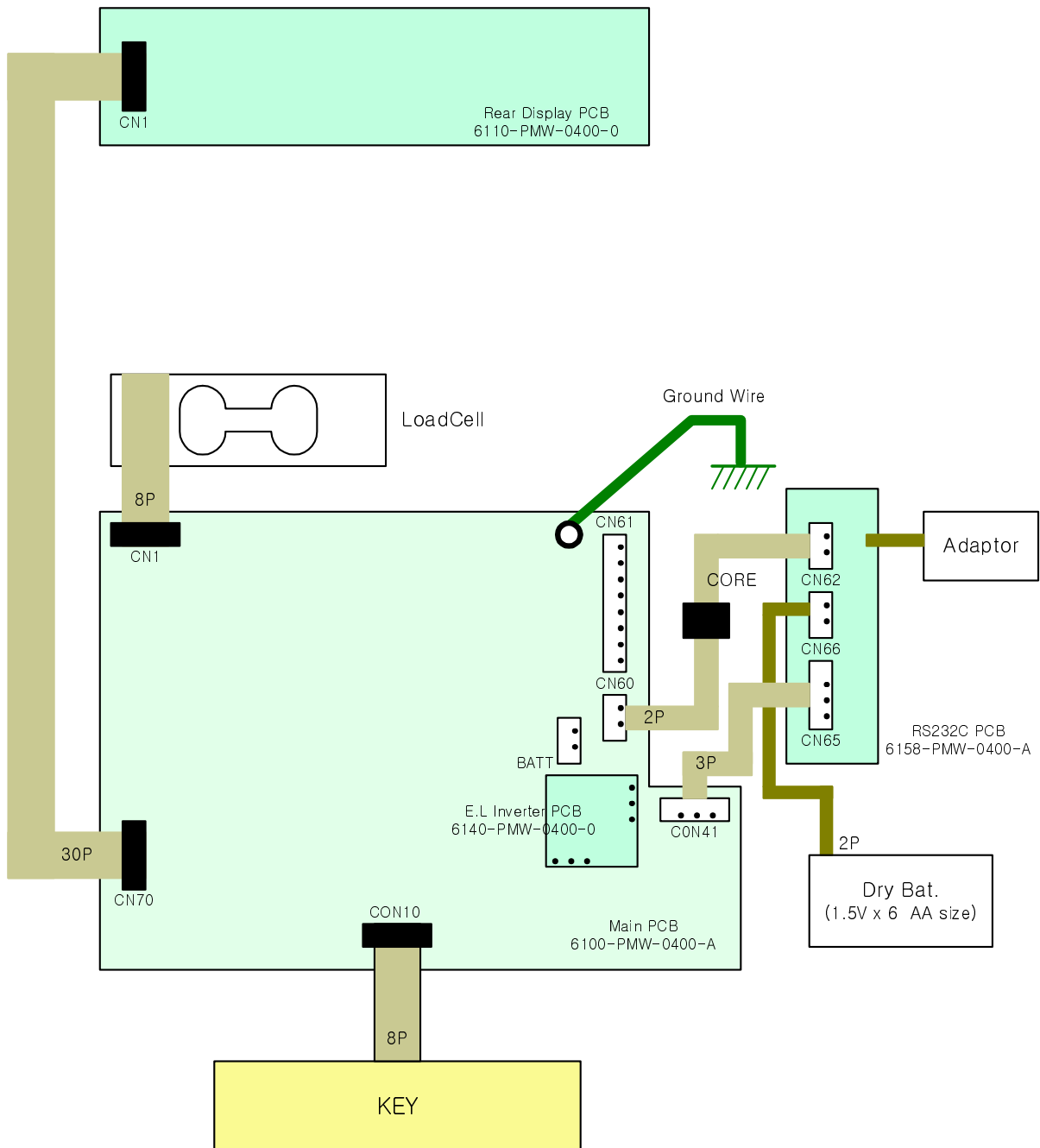
Title		
MW2 Series DISPLAY CIRCUIT		
Size	Document Number	Rev
A3	6100-PMW-0400-A	00
Date:	Monday, June 04, 2001	Sheet 4 of 5

# 5. Charge Circuit. No 5/5

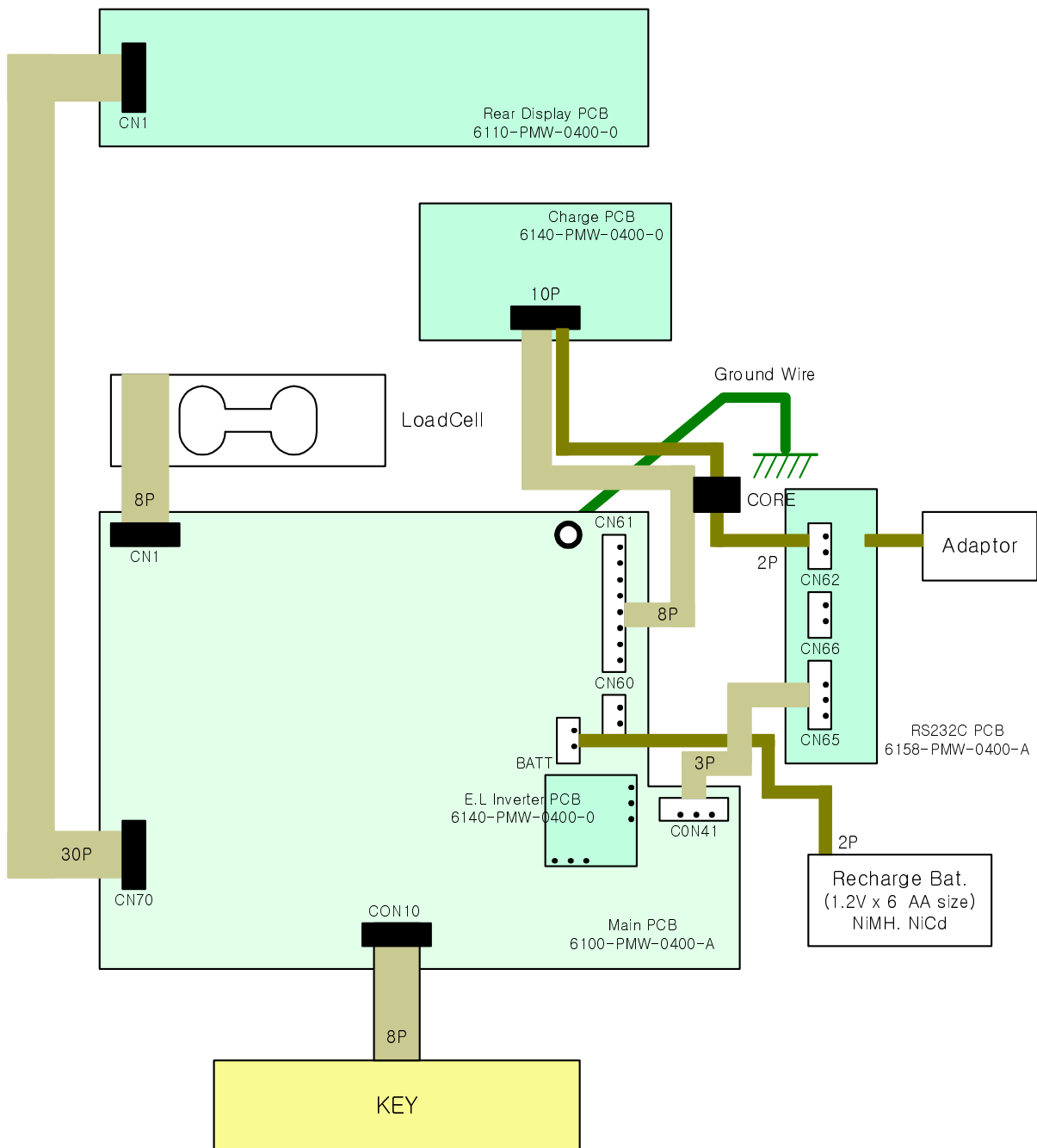


## C. Wiring Diagram

### 1. Without Recharge Option.

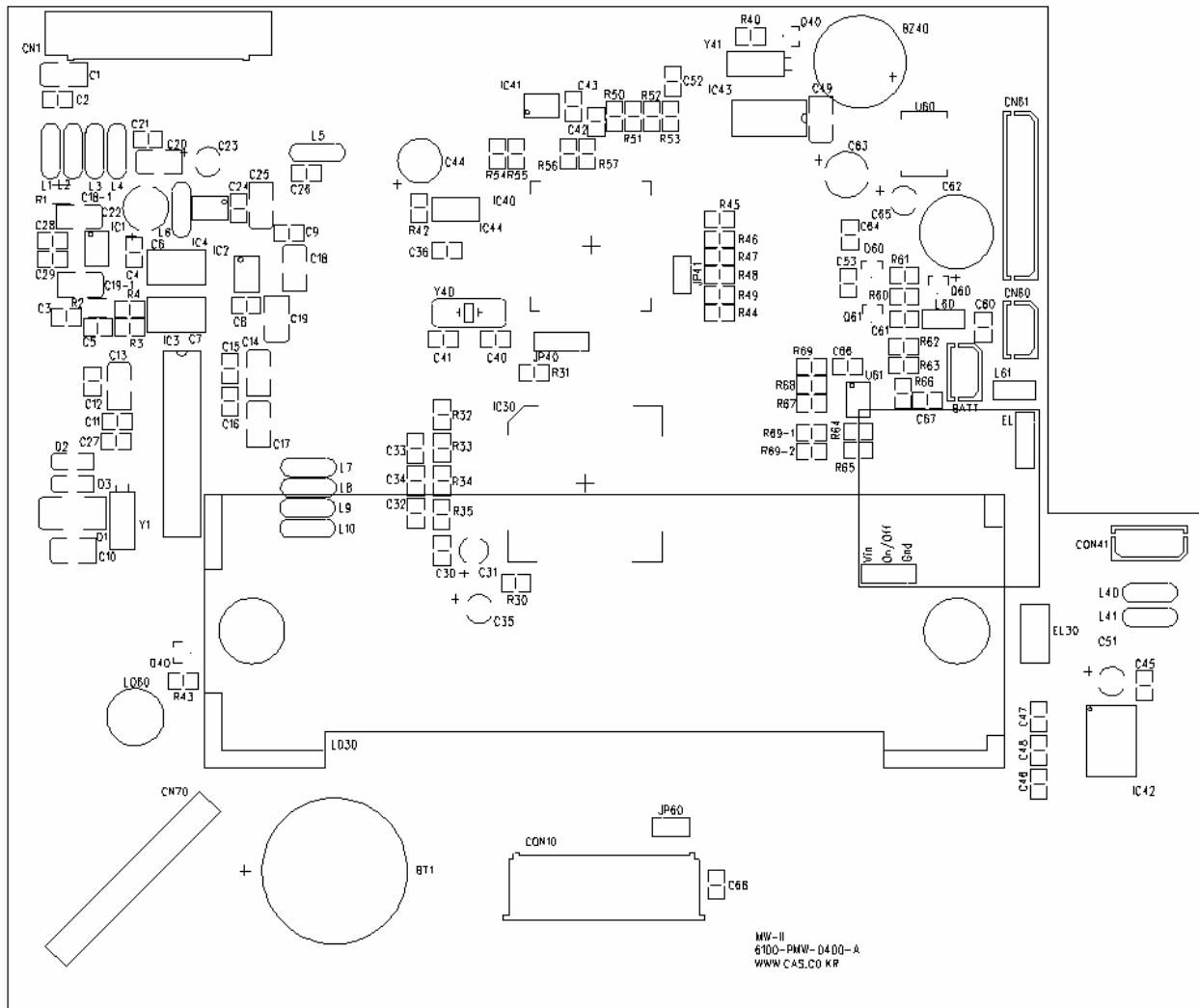


## 2. With Recharge Option

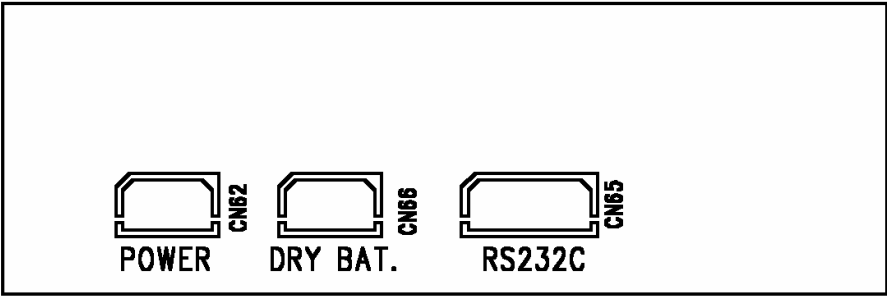
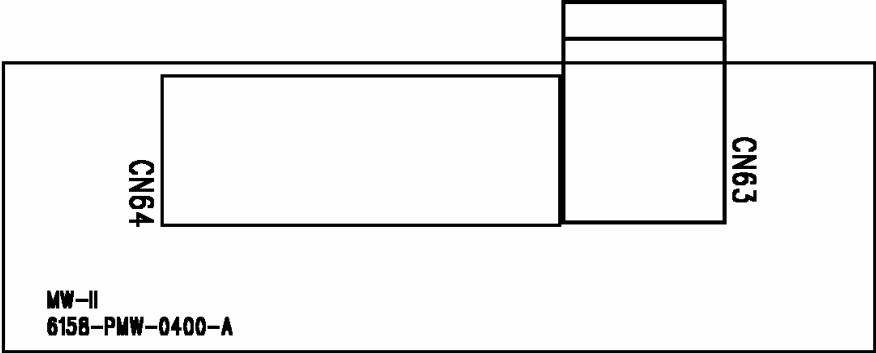


## D. Parts Location

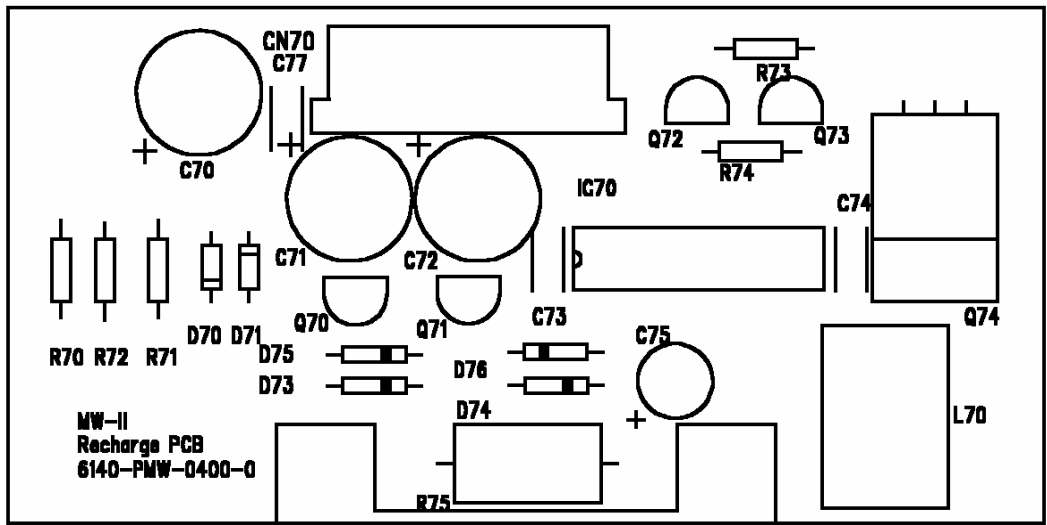
### 1. Main PCB Part Location



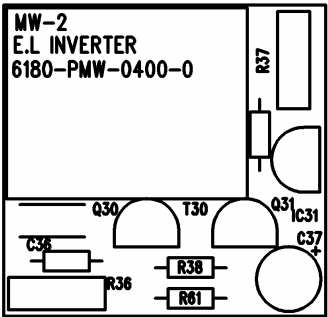
2. RS232C PCB Part Location



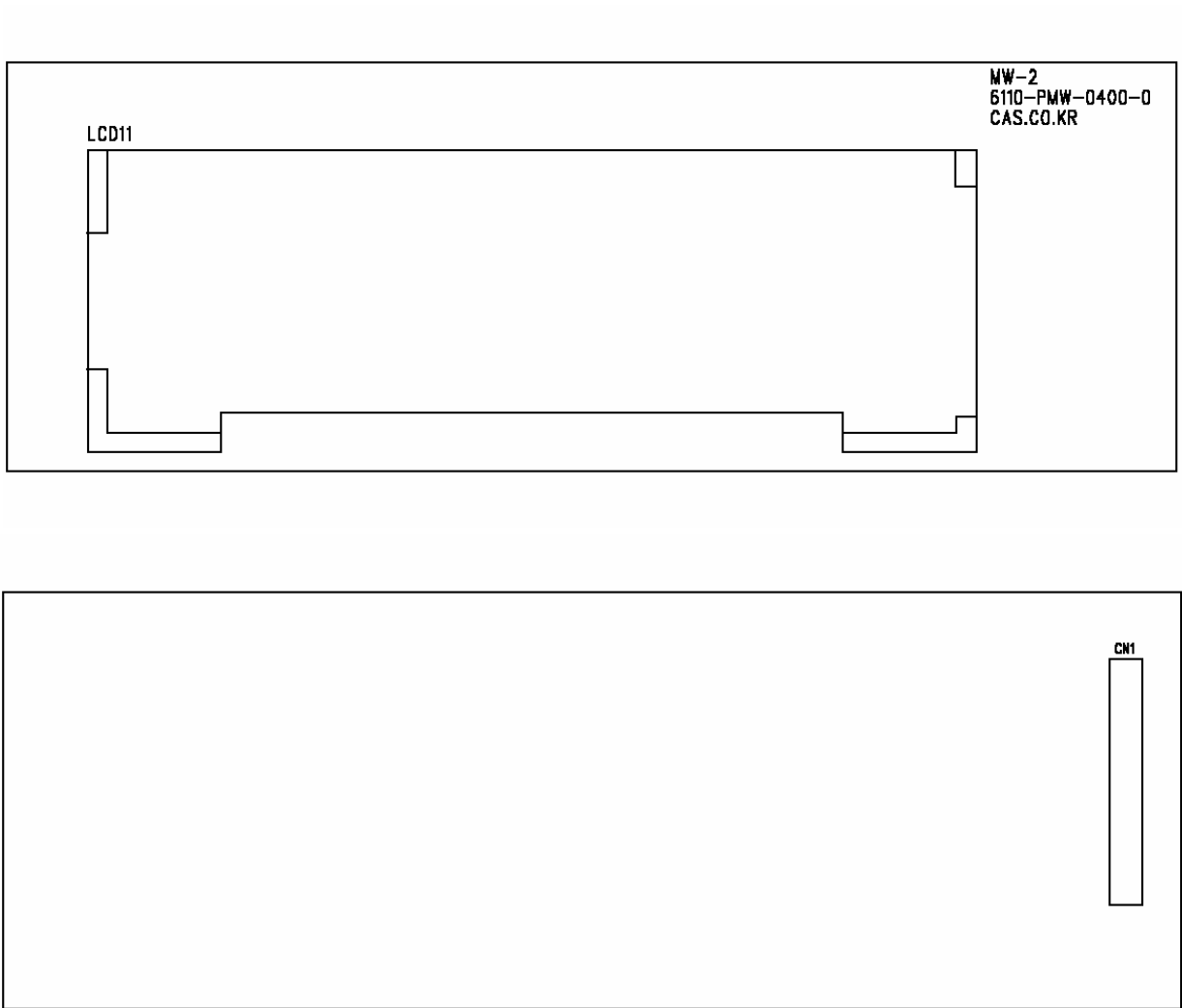
### 3. Recharge PCB Part Location



### 4. E.L Inverter PCB Part Location



5. Rear Display PCB Part Location





1



## 4. The Error Message

### A. Error Message

Error	Reasons & Solutions	Note
<b>C A L. E r</b>	– Span calibrate the scale, if this error is still displayed, check EEPROM.	Calibration Error
<b>r t c. E r</b>	– Check Real Time Clock.	Real Time Clock Error
<b>O L - L</b>	– Check for platter or platform obstruction. – Sample weight is lower than standard weight in counting and percent mode. ※ Standard weight( MW-II 300 ) Counting mode : 2g Percent mode : 5g	Underload Error
<b>O L - H</b>	– Remove all items from platter and turn on the power.	Overload Error
<b>I n i t ?</b>	– If you want to initialize EEPROM, press the SET key.	EEPROM Initializing
<b>L A c k</b>	– Minimum unit weight is lower than 0.005g when you set sample in counting mode and percent mode.	Lack Unit Weight

## B. Troubleshooting

### 1. “ CAL. Er”

- 1) Go to calibration mode. **CAL** Switch is located in the battery cover at the bottom of the scale. While pressing the switch, turn on the power then you will go to calibration mode.
- 2) Span calibrate the scale on “ **C.SPAN**” menu. Refer to Span Calibration on page 6.
- 3) Press the **MODE** key twice, the display shows “ **C.trim**” .
- 4) When the display shows “ **C.trim**” , press the **CAL** switch and **SET** key.
- 5) The display shows AD value, this value is flickering because it is not filtered. If it is not flickering, it means a failure of AD part.
- 6) Make sure that there is nothing on the platter and press the **TARE** key.
- 7) Place the weight of maximum capacity on the platter.
- 8) If the value is lower than 200.000, check the output of load cell. This value should be greater than 200.000.
- 9) Turn the power off and on. You will go to normal mode. If the display shows “ **CAL. Er**” , check EEPROM.

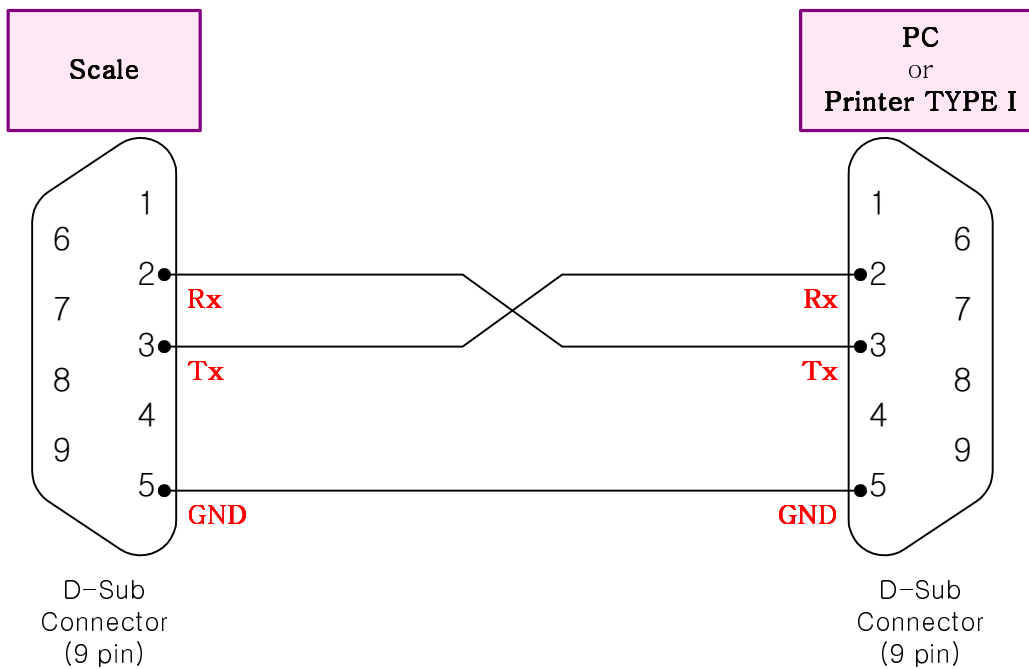
### 2. “ Init ?”

- 1) If the display shows “ **Init ?**” , press the **SET** key. If you press another key, EEPROM is not initialized and go to next step.
- 2) “ **CAL.Er**” is displayed in 10 seconds.
- 3) Span calibrate the scale again. Turn the power off and on.
- 4) If the display shows still “ **Init ?**” , check EEPROM.

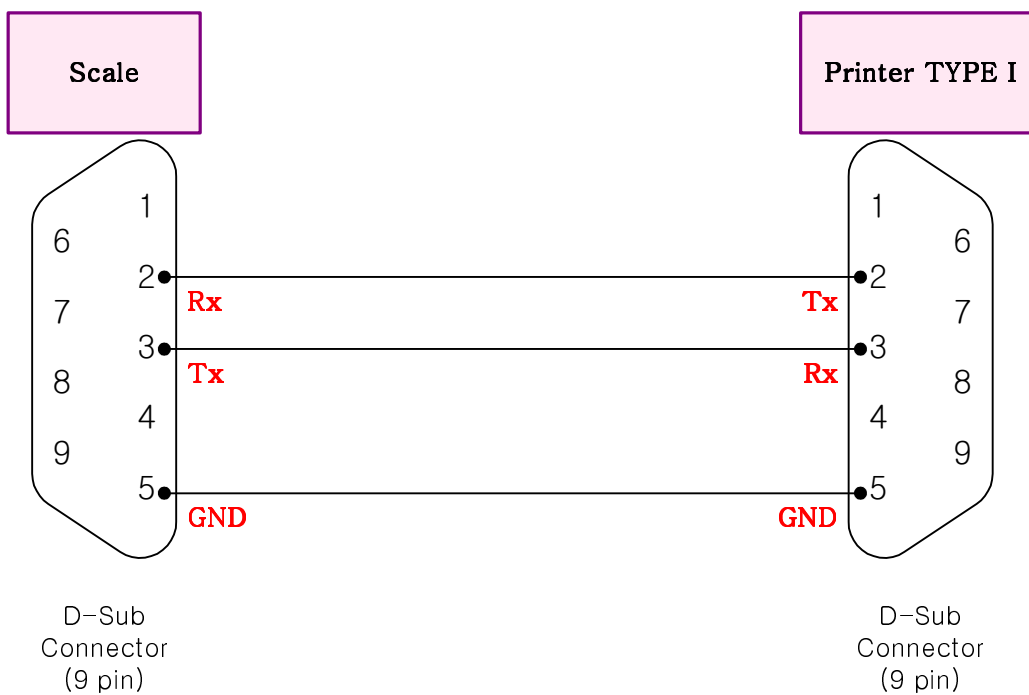
## 5. Serial Interface

### A. RS232C connector

1. **Scale** ⇔ **PC or Printer Type I** (2:Rx, 3:Tx)



2. **Scale** ⇔ **Printer Type II** (2:Tx, 3:Rx)



## B. Data Transmission Frame

<b>PRNCON(3)</b>	<b>DATE(15)</b>	<b>SP(1)</b>	<b>TIME(8)</b>	<b>SP(1)</b>	<b>WEIGHT(10)</b>	<b>SP(1)</b>	<b>UNIT(3)</b>	<b>CR(1)</b>	<b>LF(1)</b>
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Total Length : 24~44 bytes

ITEM		Size(bytes)	DESCRIPTIONS																																																									
CR	1		– Carriage Return, 0x0D																																																									
LF	1		– Line Feed, 0x0A																																																									
SP	1		– Space, 0x20																																																									
PRNCON	0~3	<table><tr><td>C1</td><td>C2</td><td>C3</td></tr></table>	C1	C2	C3																																																							
		C1	C2	C3																																																								
		<div>– If you set P.conch to On in Setup menu, 3 bytes is transmitted.</div> <div>– If you select OFF, transmission is not performed.</div> <table><tr><td>C1</td><td>C2</td><td>C3</td></tr><tr><td>0x1B</td><td>0x21</td><td>0x30</td></tr></table>	C1	C2	C3	0x1B	0x21	0x30																																																				
C1	C2	C3																																																										
0x1B	0x21	0x30																																																										
DATE	14~15	<table><tr><td>CR</td><td>LF</td><td>D0</td><td>D1</td><td>D2</td><td>D3</td><td>D4</td><td>D5</td><td>D6</td><td>D7</td><td>D8</td><td>D9</td><td>D10</td><td>CR</td><td>LF</td></tr></table>	CR	LF	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	CR	LF																																											
		CR	LF	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	CR	LF																																												
		<div>– Date format is different depends on the setting of “ P.PdAtE” in Setup menu.</div> <div>– If you select OFF, transmission is not performed.</div> <div>2001/12/01 (14 bytes)</div> <table><tr><td>CR</td><td>LF</td><td>D0</td><td>D1</td><td>D2</td><td>D3</td><td>D4</td><td>D5</td><td>D6</td><td>D7</td><td>D8</td><td>D9</td><td>CR</td><td>LF</td></tr><tr><td>CR</td><td>LF</td><td>' 2'</td><td>' 0'</td><td>' 0'</td><td>' 1'</td><td>' /'</td><td>' 1'</td><td>' 2'</td><td>' /'</td><td>' 0'</td><td>' 1'</td><td>CR</td><td>LF</td></tr></table> <div>Dec/01/2001 (15 bytes)</div> <table><tr><td>CR</td><td>LF</td><td>D0</td><td>D1</td><td>D2</td><td>D3</td><td>D4</td><td>D5</td><td>D6</td><td>D7</td><td>D8</td><td>D9</td><td>D10</td><td>CR</td><td>LF</td></tr><tr><td>CR</td><td>LF</td><td>' D'</td><td>' e'</td><td>' c'</td><td>' /'</td><td>' 0'</td><td>' 1'</td><td>' /'</td><td>' 2'</td><td>' 0'</td><td>' 0'</td><td>' 1'</td><td>CR</td><td>LF</td></tr></table>	CR	LF	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	CR	LF	CR	LF	' 2'	' 0'	' 0'	' 1'	' /'	' 1'	' 2'	' /'	' 0'	' 1'	CR	LF	CR	LF	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	CR	LF	CR	LF	' D'	' e'	' c'	' /'	' 0'	' 1'	' /'	' 2'	' 0'	' 0'	' 1'	CR	LF
		CR	LF	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	CR	LF																																													
		CR	LF	' 2'	' 0'	' 0'	' 1'	' /'	' 1'	' 2'	' /'	' 0'	' 1'	CR	LF																																													
CR	LF	D0	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	CR	LF																																														
CR	LF	' D'	' e'	' c'	' /'	' 0'	' 1'	' /'	' 2'	' 0'	' 0'	' 1'	CR	LF																																														
TIME	8	<table><tr><td>T0</td><td>T1</td><td>T2</td><td>T3</td><td>T4</td><td>T5</td><td>T6</td><td>T7</td></tr></table>	T0	T1	T2	T3	T4	T5	T6	T7																																																		
		T0	T1	T2	T3	T4	T5	T6	T7																																																			
		<div>– In the transmission.</div> <div>– “ HH:MM:SS”</div> <div>14: 24: 36 sec</div> <table><tr><td>T0</td><td>T1</td><td>T2</td><td>T3</td><td>T4</td><td>T5</td><td>T6</td><td>T7</td></tr><tr><td>' 1'</td><td>' 4'</td><td>' :'</td><td>' 2'</td><td>' 4'</td><td>' :'</td><td>' 3'</td><td>' 6'</td></tr></table>	T0	T1	T2	T3	T4	T5	T6	T7	' 1'	' 4'	' :'	' 2'	' 4'	' :'	' 3'	' 6'																																										
		T0	T1	T2	T3	T4	T5	T6	T7																																																			
' 1'	' 4'	' :'	' 2'	' 4'	' :'	' 3'	' 6'																																																					
WEIGHT	10	<table><tr><td>ST</td><td>' :'</td><td>SG</td><td>G0</td><td>G1</td><td>G2</td><td>G3</td><td>G4</td><td>G5</td><td>G6</td></tr></table>	ST	' :'	SG	G0	G1	G2	G3	G4	G5	G6																																																
		ST	' :'	SG	G0	G1	G2	G3	G4	G5	G6																																																	
		<div>– ST : stability. ' W' (stable) or ' w' (unstable)</div> <div>– SG : sign. ' -' (negative) or ' ' (positive, SP)</div> <div>– G0~G6 : weight , “ Overload” or “ Invalid”</div> <div>W: 128.35</div> <table><tr><td>ST</td><td>' :'</td><td>SG</td><td>G0</td><td>G1</td><td>G2</td><td>G3</td><td>G4</td><td>G5</td><td>G6</td></tr><tr><td>' W'</td><td>' :'</td><td>SP</td><td>SP</td><td>' 1'</td><td>' 2'</td><td>' 8'</td><td>' .'</td><td>' 3'</td><td>' 5'</td></tr></table>	ST	' :'	SG	G0	G1	G2	G3	G4	G5	G6	' W'	' :'	SP	SP	' 1'	' 2'	' 8'	' .'	' 3'	' 5'																																						
		ST	' :'	SG	G0	G1	G2	G3	G4	G5	G6																																																	
' W'	' :'	SP	SP	' 1'	' 2'	' 8'	' .'	' 3'	' 5'																																																			
UNIT	1~3	<table><tr><td>U0</td><td>U1</td><td>U2</td></tr></table>	U0	U1	U2																																																							
		U0	U1	U2																																																								
		<div>– Unit weight : g, ct, oz, lb, tl, dwt, mom, gn, pcs., %</div> <table><tr><td>U0</td><td>U1</td><td>U2</td></tr><tr><td>' p'</td><td>' c'</td><td>' s'</td></tr></table>	U0	U1	U2	' p'	' c'	' s'																																																				
U0	U1	U2																																																										
' p'	' c'	' s'																																																										

## 6. Parts list

### A. ELECTRONIC PARTS

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
MAIN PCB ASS'Y		[ 240-M21-EMAP-UN01-01 ]				
1	6100-PMW-0400-B	MAIN PCB	6100-PMW-0400-B(MW-11)	EA	1	
2	6200-ISO-8951-A	IC (CPU)	P89C51RD2HBA	EA	1	IC40
3	6205-ISO-9346-A	IC(EEP-ROM)	CAT93C46S(SMD)	EA	1	IC41
4	6214-100-5522-0	A/D CONVERTER	CS5522-AP(MW-300)	EA	1	IC3
5	6220-ISO-7805-0	IC(REGULATOR)	KA7805(D-PACK)	EA	1	U60
6	6224-100-7225-0	IC(DRIVER)	UPD 7225G00	EA	1	IC30
7	6228-100-8563-0	IC(TIMMER)	PCF8563P/F4	EA	1	IC43
8	6240-ISO-0062-0	IC(OP-AMP)	NJM062-JRC	EA	1	U61
9	6240-ISO-0177-0	IC(OP-AMP)	OP-177GS	EA	2	IC1,2
10	6240-ISO-0232-0	IC(LINE DRIVEER)	ICL232CBE(SMD)	EA	1	IC42
11	6242-ISO-7660-0	IC	TC-7660ICL(S)	EA	1	IC4
12	6271-100-7180-0	SIDAC(VARISTOR)	1NR7D180	EA	5	RV1,2,3,4,5
13	6281-100-1298-0	CHIP-TRANSISTOR	KTA1298Y	EA	2	Q60,40
14	6281-100-2222-0	CHIP TRANSISTOR	2N2222AS	EA	1	Q61
15	6294-ICP-0184-0	CHIP DIODE	KDS184	EA	2	D40,60
16	6294-ISW-4148-A	SWITCHING-DIODE	PMLL4148L(LP-CONT')	EA	3	D1,2,3
17	6527-ID3-0300-0	CHIP RE' 1/10W	RR1220P-303D(30 K $\Omega$ )	EA	3	R64,67,31
18	6527-ID3-0499-0	CHIP RE' 1/10W	RR1220P-4992D(49.9K)	EA	4	R3,4,30,69-2
19	6527-IJ0-2200-0	CHIP RE' 1/10W	FTR 0805 221 JR(220)	EA	1	R70
20	6527-IJ3-0010-0	CHIP RE' 1/10W	FTR 0805 102 JR(1K)	EA	5	R32,50,51,52,53
21	6527-IJ3-0020-0	CHIP RE' 1/10W	FTR 0805 202 JR(2K)	EA	1	R61
22	6527-IJ3-0047-0	CHIP RE' 1/10W	FTR 0805 472 JR(4.7K)	EA	4	R54,55,56,57
23	6527-IJ3-0100-0	CHIP RE' 1/10W	FTR 0805 103 JR(10K)	EA	6	R43,40,60,33,34,35
24	6527-IJ3-0200-0	CHIP RE' 1/10W	FTR 0805 203 JR(20K)	EA	2	R65,71
25	6527-IJ3-0470-0	CHIP RE' 1/10W	FTR 0805 473 JR(47K)	EA	2	R68,69-1
26	6527-IJ3-1000-0	CHIP RE' 1/10W	FTR 0805 104 JR(100K)	EA	10	R44,45,46,47,48,49,62,63,66,69
27	6540-LB3-1200-0	PRECISION RESISTOR	FLBY 120K	EA	2	R1,2
28	6670-T00-0470-0	INDUCTANCE	470 $\mu$ H	EA	2	L60,61
29	6702-CAP-0106-0	CHIP TANTAL	10MCS 106 MB TER	EA	12	C49,1,20,25,18-1,18,19,19-1,13,14,10,17
30	6704-C25-0330-0	ELECTRIC-CONDENSER	330UF/25V	EA	1	C62
31	6706-C16-0010-0	CHIP ELECTRIC CONDENSER	10uF/16V	EA	5	C51,65,31,23,69
32	6706-C16-0100-0	CHIP ELECTRIC CONDENSER	100uF/16V $\Phi$ 6.3	EA	2	C22,63
33	6706-C50-0001-0	CHIP ELECTRIC CONDENSER	1uF/50V $\Phi$ 4.0	EA	1	C35
34	6712-CHP-0103-0	CHIP CONDENSER	CL21F 103 KBNC	EA	1	C11
35	6712-CHP-0104-0	CHIP CONDENSER	CL21F 104 KBNC	EA	32	C2,8,9,12,15,16,21,24,26,27,28,29,30,32,33,34,36,42,43,45,46,47,48,52,53,60,61,64,66,67,68,
36	6712-CHP-0200-0	CHIP CONDENSER	CL21C 200 JBNC(20PF)	EA	2	C40,41

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
37	6712-CHP-0300-0	CHIP CONDENSER	CL21F 300 JBN	EA	1	C5
38	6720-CAP-0105-A	POLYESTER-CONDENSER	1UF/63V-J(BOX)	EA	2	C6,7
39	6800-F00-0220-0	EMI FILTER	220PF(TDK)	EA	12	L1,2,3,4,5,6,7,8,9,10,40,41
40	7002-Z00-0070-0	PIEZO BUZZER	EFM-250A	EA	1	BZ40
41	7010-ZK0-3276-0	CRYSTAL	32.768KHZ	EA	2	Y1,41
42	7010-ZM0-1105-A	CRYSTAL	11.0592 MHZ(ATS-49/U)	EA	1	Y40
43	7212-D00-9758-A	LCD(MW-2)	9758A(TRANSFLECTIVE)	EA	1	LD30
44	7520-P00-2032-A	BATTERY	CR2032-3V(PIN TYPE)	EA	1	BT1
45	7600-StA-1902-0	TACT S/W	11902(DJTA-1102)	EA	1	SW41
46	7805-CCN-6702-0	CONNECTOR(WAFER)	5267-02	EA	1	CN67
47	7805-CCN-6703-0	CONNECTOR(WAFER)	5267-03	EA	1	CN41
48	7805-CCN-6708-0	CONNECTOR(WAFER)	5267-08	EA	1	CN61
49	7807-CFP-0008-0	FPC-CONNECTOR	FCZ254-8S	EA	1	CN1
50	7807-CFP-0008-A	FPC-CONNECTOR	FCZ254-8R	EA	1	CN10
51	7821-CJM-0002-0	JUMPER	2PIN	SET	1	JP41
52	7821-CJM-0003-0	JUMPER	3PIN	SET	1	JP40
53	7806-YDA-0030-0	CONNECTOR(WAFER)	YDAW200-30(MW-2)	EA	1	Option(D)
54	7222-D00-0001-0	EL BACK LIGHT	SPEL-01-001H(MW-2)	EA	1	Option(B)
55	7232-DRG-0004-0	LED LAMP	Φ5-(R,G) BL-BVT 204(ANODE)	EA	1	Option(R)
56	2090-H00-0007-0	LED HOLDER	10mm*6mm*5mm(MW-2)	EA	1	Option(R)

RS232C PCB ASS'Y [ 240-M21-ERSP-UN01-01 ]

1	6158-PMW-0400-B	RS232C PCB	6158-PMW-0400-B(MW-11)	EA	1	
2	7610-StA-0302-0	ADAPTOR JACK	HS-302	EA	1	CN63
3	7805-CCN-6703-0	CONNECTOR(WAFER)	5267-03	EA	1	CN65
4	7805-CCN-6704-0	CONNECTOR(WAFER)	5267-04	EA	1	CN66
5	7812-C00-0009-B	D-SUB CONNECTOR	RD9S	EA	1	CN64
6	7840-W00-0905-0	CONNECTOR WIRE	3P*3P*50mm(MW-2)	EA	1	

POWER ASS'Y [ 240-M21-EPWP-UN01-01 ]

1	7840-W00-1216-0	CONNECTOR WIRE	8P*4P*160mm-CORE(MW-2)	EA	1	
	7840-W00-2221-0	CONNECTOR WIRE	10P*8P*4P*210mm-CORE	EA	1	Option(R)
2	7860-GND-0210-0	GROUND WIRE	1P*210mm(MW-2)	EA	1	
3	7860-GND-0040-0	GROUND WIRE	1P*40mm(MW-2)	EA	1	

E.L INVERTER PCB ASS'Y [ 240-M25-EELP-UN01-01 ]

1	6180-PMW-0400-0	E.L INVERTER PCB	6180-PMW-0400-0	EA	1	
2	6220-I00-1350-0	IC(REGULATOR)	S-81350 HG	EA	1	IC31
3	6280-I00-1266-0	TRANSISTOR	2SA1266	EA	1	Q30
4	6280-I00-1815-0	TRANSISTOR	2SC1815A (3198)	EA	1	Q31
5	6506-MF3-0010-0	RESISTOR 1/8W	MFR 1K (±1%)-F	EA	1	R61
6	6506-MF3-0100-0	RESISTOR 1/8W	MFR 10K (±1%)-F	EA	1	R36
7	6506-MF3-1000-0	RESISTOR 1/8W	MFR 100K (±1%)-F	EA	2	R37,38
8	6704-C25-0100-0	ELECTRIC-CONDENSER	100UF/25V	EA	1	C37

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
9	6710-CAP-0104-0	CERAMIC-CONDENSER	0.1UF/25V(50V)	EA	1	C36
10	7244-D00-0005-0	E.L INVERTER	SPEL-1-5C(NC,B1,C1-2001B)	EA	1	T30
11	7810-C00-9295-0	CONNECTOR	FW0254-30	EA	0.2	

RECHARGE PCB ASS'Y [ 240-M25-ERCP-UN01-01 ]

Option(R)

1	6140-PMW-0400-0	RECHARGE PCB	6140-PMW-0400-0	EA	1	
2	6232-100-0713-0	IC	MAX713CPE	EA	1	IC70
3	6273-100-9530-0	MOSFET	IRF9530	EA	1	Q74
4	6280-100-1266-0	TRANSISTOR	2SA1266	EA	1	Q73
5	6280-100-1815-0	TRANSISTOR	2SC1815A (3198)	EA	2	Q70,71
6	6280-100-1959-0	TRANSISTOR	2SC1959	EA	1	Q72
7	6291-IP0-5819-0	POWER DIODE	1N5819	EA	4	D73,74,75,76
8	6294-ISW-4148-0	SWITCHING-DIODE	1N4148P	EA	2	D70,71
9	6505-MB0-0500-0	RESISTOR 1/4W	MFR 50Ω (±0.1%)-B	EA	2	R71,73
10	6512-CJ0-0006-6	RESISTOR 2W	CFR 0.66Ω (±5%)	EA	1	R75
11	6515-CJ3-0010-0	RESISTOR 1/4W	CFR 1K (±5%)	EA	1	R74
12	6515-CJ3-0020-0	RESISTOR 1/4W	CFR 2K (±5%)	EA	1	R70
13	6515-CJ3-1000-0	RESISTOR 1/4W	CFR 100K (±5%)	EA	1	R72
14	6670-T00-0220-0	INDUCTANCE	220uH	EA	1	L70
15	6704-C16-0100-0	ELECTRIC-CONDENSER	100uF/16V	EA	1	C75
16	6704-C25-0330-0	ELECTRIC-CONDENSER	330UF/25V	EA	3	C70,71,76
17	6704-C25-0470-0	ELECTRIC-CONDENSER	470uF/25V	EA	1	C72
18	6710-CAP-0104-0	CERAMIC-CONDENSER	0.1UF/25V(50V)	EA	1	C77
19	6710-CAP-P221-0	CERAMIC-CONDENSER	220PF/50V	EA	1	C74
20	6720-CAP-0104-A	POLYESTER-CONDENSER	0.1UF/63V-J(B0X)	EA	1	C73
21	7809-CAL-0010-0	CONNECTOR(WAFER)	LAL 0640-10	EA	1	CN70

REAR DISPLAY PCB ASS'Y [ 240-M24-ERDP-UN01-01 ]

Option(D)

1	2631-A00-0002-0	VFD CUSHION	30*20*6T	EA	2	
2	6110-PMW-0400-A	DISPLAY PCB	6110-PMW-0400-A	EA	1	
3	7212-D00-9758-0	LCD	9758A-R/F(MW-11)	EA	1	LCD11
4	7806-YDW-0030-0	CONNECTOR(WAFER)	YDW200-30(MW-2)	EA	1	CN1
5	7830-W00-3023-0	REAR DISPLAY WIRE	30P*30P*230(MW-2)	EA	1	



## B. MECHANICAL PART

MODEL : MW-11(300)

REV:01

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
ASS'Y UPPER COVER (240-M21-MUPC-UN01-01)						
1	2000-A00-0100-0	UPPER COVER	ABS 750 190*291*55	EA	1	CE
	2000-A00-0117-0	UPPER COVER	ABS 750 190*291*55(CE용)	EA	1	
2	2050-MW2-0000-0	DISPLAY COVER	MW-11 (후면)	EA	1	Option(D)
	2050-MW2-0333-5	DISPLAY COVER	MW-11 (300g) 영공 REAR	EA	1	
3	2050-MW2-0333-4	DISPLAY COVER	MW-11 (300g) 영공	EA	1	Option(R)
	2050-MW2-0333-5	DISPLAY COVER	MW-11 (300g) 영공 충전	EA	1	
4	2100-MW2-0000-0	MEMBRANE S/W	LEXAN MW-11	EA	1	
5	1810-MW0-0033-2	SPEC PLATE	MW-120, 1200, 11 공용 영공	EA	1	
6	1210-A00-0020-0	PLATFORM	Φ35*Φ10*15	EA	1	
7	2631-A00-0021-A	DOUBLE TAPE	Φ34	EA	1	
8	1000-A00-0115-0	TRAY	Φ130*0.5t	EA	1	
9	2000-A00-0108-0	L/C HOLE COVER	Φ59*Φ39.6*11.5	EA	1	
10	1590-A00-0036-0	CONDUCTIVE SPRING	Φ12*Φ8*4*0.3t	EA	1	
ASS'Y L/C BRACKET (240-M21-MLCB-UN01-01)						
1	1050-A00-0038-0	L/C BRACKET	AL 1.2t, 61*22*36	EA	1	
2	1210-A00-0089-0	LOAD SHAFT	AL Φ7.3*19	EA	1	
3	1501-A00-0306-0	MACHINE SCREW(FH)	M3*6	EA	1	
4	1551-MSU-0500-0	WASHER(SPR)	Φ5-SUS	EA	2	
5	1530-MSU-0510-0	WRENCH BOLT	M5*10-SUS	EA	2	
ASS'Y BODY (240-M21-MB00-UN01-01)						
1	2000-A00-0099-A	BODY	ABS750 190*291*45	EA	1	CE
	2000-A00-0118-0	BODY	ABS750 190*291*45(CE용)	EA	1	
2	2008-A00-0002-0	FOOT	PVC 25*6	EA	4	
3	1502-A00-0408-0	MACHINE SCREW(PH)	M4*8	EA	2	
4	1265-A00-0001-0	SEALING BOLT	M3*0.5*5(BsBn)	EA	1	
5	1000-A00-0202-0	SEALING PLATE	SUS 42*17*1t	EA	1	
6	1590-A00-0032-0	BATTERY SPRING-A	Φ9*Φ0.6*3 (MW-11)	EA	1	
7	1590-A00-0033-0	BATTERY SPRING-B	Φ9*Φ0.6*6*3 (MW-11)	EA	1	
8	2000-A00-0101-0	BATTERY COVER	ABS750 119.6*75.6*2t	EA	1	
9	1590-A00-0034-0	BATTERY SPRING-C	Φ9*Φ0.6*3*6 (MW-11)	EA	1	
10	1590-A00-0035-0	BATTERY SPRING-D	Φ9*Φ0.6*6 (MW-11)	EA	1	
11	1512-A00-0306-0	TAPPING SCREW(PH)-2	3*6	EA	2	
12	2013-A00-0005-A	BATTERY HOLDER	HDPE	EA	1	
13	1512-A00-0310-0	TAPPING SCREW(PH)-2	3*10	EA	2	
14	1030-A00-0148-0	LIMIT BRACKET	SPC 1.5t, 30*14*15	EA	1	
15	1503-A00-0512-0	MACHINE SCREW(WPH)	M5*12	EA	1	
16	1503-MPN-0310-0	MACHINE SCREW(WPH)	M3*10	EA	1	
17	1512-A00-0420-0	TAPPING SCREW(PH)-2	4*20	EA	2	
18	2022-A00-0005-0	W/L GAUGE	Φ15*8(RED)	EA	1	

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
19	1512-A00-0310-0	TAPPING SCREW(PH)-2	3*10	EA	2	
20	2000-A00-0107-A	LCD BRACKET	ABS750	EA	1	
21	1040-A00-0006-0	SHIELD CASE	SPTE 0.5t,63*45*13.5	EA	1	
22	1512-A00-0412-0	TAPPING SCREW(PH)-2	4*12	EA	2	
23	1530-MSU-0515-0	WRENCH BOLT(WPH)	M5*15	EA	2	
24	1503-MPN-0304-0	MACHINE SCREW(WPH)	M3*4	EA	1	
25	1030-A00-0150-0	L/C PLATE	SPC 2t	EA	1	
26	1030-A00-0152-0	PCB BRACKET	SPC 1t	EA	1	
27	1502-A00-0305-0	MACHINE SCREW	M3*5	EA	1	
28	1512-A00-0310-0	TAPPING SCREW(PH)-2	3*10	EA	1	
29	1503-A00-0310-0	MACHINE SCREW	M3*10	EA	2	
30	7840-W00-0224-0	CONNECTOR WIRE	2P*70*170(MW-11)	EA	1	
31	2631-A00-0023-0	BATTERY COVER CUSHION	80*26*2t(EVA)	EA	1	
ASS'Y C/T BOX (240-M21-MCTB-UN01-01)						
1	7510-P12-1122-0	AC ADATOR	110/220-12V/300mA	EA	1	
	7510-P12-1122-G	AC ADATOR	110/220-12V/850mA	EA	1	
	7510-P12-0220-H	AC ADATOR	220V 12V/850mA	EA	1	
2	9100-MW2-0100-0	C/T BOX-1	MW-2	EA	1	
3	9202-APE-0003-0	POLY ETHYLENE PAD	268*200*110	EA	1	
4	9203-APE-0001-0	POLY ETHYLENE BOX	345*208	EA	2	
5	9310-A00-0003-0	MANUAL POLY BAG	170*250*0.05t	EA	1	
6	9302-A00-0003-0	TRAY POLY BAG	200*250*0.05t	EA	1	
7	9302-A00-0005-A	SET POLY BAG	270*350*0.04t	EA	1	
8	9400-A00-0046-0	SILICAGEL	10g	EA	2	
9	7520-P00-0170-0	NI-MH BATTERY	GP130AAHC(1.2V)	EA	6	
LOAD CELL ASS'Y (LLA-BMW-301G-0000-ON)						
			MW-2 L/C(200/300g)	EA	1	

Option(R)  
CE

Option(R)

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
ASS'Y UPPER COVER (240-M23-MUPC-UN01-01)						
1	2000-A00-0100-0	UPPER COVER	ABS 750 190*291*55	EA	1	CE
	2000-A00-0117-0	UPPER COVER	ABS 750 190*291*55(CE용)	EA	1	
2	2050-MW2-0000-0	DISPLAY COVER	MW-11 (후면)	EA	1	Option(D)
	2050-MW2-3033-5	DISPLAY COVER	MW-11 (3kg) 영공 REAR	EA	1	
3	2050-MW2-3033-4	DISPLAY COVER	MW-11 (3kg) 영공	EA	1	Option(R)
	2050-MW2-3033-6	DISPLAY COVER	MW-11 (3kg) 영공 충전	EA	1	
4	2100-MW2-0000-0	MEMBRANE S/W	LEXAN MW-11	EA	1	
5	1810-MW0-0033-2	SPEC PLATE	MW-120, 1200, 11 공용 영공	EA	1	
6	1000-A00-0203-0	TRAY	SUS 0.5t, 158*145*0.5t	EA	1	
7	1050-A00-0039-0	PLATFORM	AL 2t, 156*143	EA	1	
ASS'Y L/C BRACKET (240-M23-MLCB-UN01-01)						
1	1030-A00-0147-0	L/C BRACKET	SPC 2t, 65*24*53	EA	1	
2	1551-MSU-0500-0	WASHER(SPR)	Φ 5-SUS	EA	2	
3	1530-MSU-0510-0	WRENCH BOLT	M5*10-SUS	EA	2	
ASS'Y BODY (240-M21-MB00-UN01-01)						
1	2000-A00-0099-A	BODY	ABS750 190*291*45	EA	1	CE
	2000-A00-0118-0	BODY	ABS750 190*291*45(CE용)	EA	1	
2	2008-A00-0002-0	FOOT	PVC 25*6	EA	4	
3	1502-A00-0408-0	MACHINE SCREW(PH)	M4*8	EA	2	
4	1265-A00-0001-0	SEALING BOLT	M3*0.5*5(BsBn)	EA	1	
5	1000-A00-0202-0	SEALING PLATE	SUS 42*17*1t	EA	1	
6	1590-A00-0032-0	BATTERY SPRING-A	Φ 9*Φ 0.6*3 (MW-11)	EA	1	
7	1590-A00-0033-0	BATTERY SPRING-B	Φ 9*Φ 0.6*6*3 (MW-11)	EA	1	
8	2000-A00-0101-0	BATTERY COVER	ABS750 119.6*75.6*2t	EA	1	
9	1590-A00-0034-0	BATTERY SPRING-C	Φ 9*Φ 0.6*3*6 (MW-11)	EA	1	
10	1590-A00-0035-0	BATTERY SPRING-D	Φ 9*Φ 0.6*6 (MW-11)	EA	1	
11	1512-A00-0306-0	TAPPING SCREW(PH)-2	3*6	EA	2	
12	2013-A00-0005-A	BATTERY HOLDER	HDPE	EA	1	
13	1512-A00-0310-0	TAPPING SCREW(PH)-2	3*10	EA	2	
14	1030-A00-0148-0	LIMIT BRACKET	SPC 1.5t, 30*14*15	EA	1	
15	1503-A00-0512-0	MACHINE SCREW(WPH)	M5*12	EA	1	
16	1503-MPN-0310-0	MACHINE SCREW(WPH)	M3*10	EA	1	
17	1512-A00-0420-0	TAPPING SCREW(PH)-2	4*20	EA	2	
18	2022-A00-0005-0	W/L GAUGE	Φ 15*8(RED)	EA	1	
19	1512-A00-0310-0	TAPPING SCREW(PH)-2	3*10	EA	2	
20	2000-A00-0107-A	LCD BRACKET	ABS750	EA	1	
21	1040-A00-0006-0	SHIELD CASE	SPT 0.5t, 63*45*13.5	EA	1	
22	1512-A00-0412-0	TAPPING SCREW(PH)-2	4*12	EA	2	
23	1530-MSU-0515-0	WRENCH BOLT(WPH)	M5*15	EA	2	
24	1503-MPN-0304-0	MACHINE SCREW(WPH)	M3*4	EA	1	
25	1030-A00-0150-0	L/C PLATE	SPC 2t	EA	1	
26	1030-A00-0152-0	PCB BRACKET	SPC 1t	EA	1	

NO	MAT'L NEW CODE	PART NAME	SPECIFICATION	UNIT	Q'TY	LOCATION
27	1502-A00-0305-0	MACHINE SCREW	M3*5	EA	1	
28	1512-A00-0310-0	TAPPING SCREW(PH)-2	3*10	EA	1	
29	1503-A00-0310-0	MACHINE SCREW	M3*10	EA	2	
30	7840-W00-0224-0	CONNECTOR WIRE	2P*70*170(MW-11)	EA	1	
31	2631-A00-0023-0	BATTERY COVER CUSHION	80*26*2t(EVA)	EA	1	
ASS'Y C/T BOX (240-M21-MCTB-UN01-01)						
1	7510-P12-1122-0	AC ADATOR	110/220-12V/300mA	EA	1	
	7510-P12-1122-G	AC ADATOR	110/220-12V/850mA	EA	1	Option(R)
	7510-P12-0220-H	AC ADATOR	220V 12V/850mA	EA	1	CE
2	9100-MW2-0100-0	C/T BOX-1	MW-2	EA	1	
3	9202-APE-0003-0	POLY ETHYLENE PAD	268*200*110	EA	1	
4	9203-APE-0001-0	POLY ETHYLENE BOX	345*208	EA	2	
5	9310-A00-0003-0	MANUAL POLY BAG	170*250*0.05t	EA	1	
6	9302-A00-0003-0	TRAY POLY BAG	200*250*0.05t	EA	1	
7	9302-A00-0005-A	SET POLY BAG	270*350*0.04t	EA	1	
8	9400-A00-0046-0	SILICAGEL	10g	EA	2	
9	7520-P00-0170-0	NI-MH BATTERY	GP130AAHC(1.2V)	EA	6	Option(R)
LOAD CELL ASS'Y (LLA-BMW-302G-0000-0N)						
			MWN L/C(2kg/3kg)	EA	1	